STRATEGY RESEARCH PROJECT

DEFENSE INDUSTRIAL BASE SUPPORT BEYOND JOINT VISION 2010

BY

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USAWC CLASS OF 1998

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ABSTRACT

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TITLE: Defense Industrial Base Support Beyond Joint Vision 2010

FORMAT: Strategy Research Project

DATE: 14 January 1998 PAGES: 31 CLASSIFICATION: Unclassified

The defense industrial base is the foundation of national military power. From pre-Revolutionary times to now, America's defense industry either mobilized or surged to provide the weapons of war. When the Cold War ended, the world and our military strategy changed. Information Age warfare and Joint Vision 2010 military forces are the future. To support these forces, the Pentagon's strategy is to rely upon acquisition reform, dual-use technology, and privatization for production of future weapon systems and services. This paper examines the defense industrial base to determine whether or not it is postured to support Joint Vision 2010 forces.

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The Cold War was over many years ago, ending an expensive arms' race. America responded by reducing its defense budget by 38 percent, its force structure by 33 percent, and its procurement programs by 63 percent. In the mid-1980s, defense accounted for 27 percent of the federal budget and 6.2 percent of the Gross Domestic Product.[1] Today, the defense budget is $250 billion, 15 percent of the federal budget and about 3.2 percent of Gross Domestic Product. Only $44 billion goes toward weapons acquisition.[2] The rapid decline of procurement budgets led to significant excess capacity in the defense industrial base. With a new world order, we now need a Revolution in Military Acquisition Affairs to shape the defense industry for the future.

The recently completed Quadrennial Defense Review reaffirmed our future defense needs, while concluding that the national military strategy must still shape the international environment and respond to the full spectrum of threats. Underlying this strategy is a conceptual framework--Joint Vision 2010--for how U.S. forces will fight future conflicts in an uncertain world. Center to Joint Vision 2010 is the ability to continuously collect, process, and disseminate information to our forces throughout the battlespace, while denying battle-relevant information to the enemy.[3]

Called "full spectrum dominance," Joint Vision 2010 describes four operational concepts that include: (1) Dominant maneuver, (2) precision engagement, (3) full-dimensional protection, and (4) focused logistics.[4] Industrial base policies must focus on the "focused logistics" element for three important reasons. As stated earlier, there are fewer defense dollars. Second, we must create an innovative and responsive industrial base with lower costs, fewer weapons production, and reduced dependence

on foreign military sales. Third, the billions of dollars spent on defense must go beyond uniquely military applications to help economic growth and global competitiveness.[5]

The industrial base is the foundation of military national power. From pre-Revolutionary times to now, America's defense industry either mobilized or surged to provide the weapons of war. When the Cold War ended, the world and our military strategy changed. Information Age warfare and Joint Vision 2010 military forces are the future. To support these forces, the Pentagon's strategy is to rely upon acquisition reform, dual-use technology, and privatization for production of future weapon systems and services. This paper examines the defense industrial base to determine whether or not it is postured to support Joint Vision 2010 forces. To begin, a review of the historical backdrop is necessary to better understand the current issues and perspectives.

World War I Industrial Mobilization

The Revolutionary War, War of 1812, and Civil War were all costly, but did little to convince Americans that industrial planning, preparation, and mobilization for war were wise. When the U.S. entered World War I, the Services flooded industry with requests for all types of equipment. The results were utter chaos. Although the government funneled huge sums of money into the armaments' industries during the war, they were still unable to provide a fraction of needed weapons. Forced to acquire most of its heavy weapons and combat aircraft from Britain and France, the government finally stepped in and established a rating system that prioritized military goods ahead of

other categories. It also formed one of many key agencies, the War Industries Board, to run the Army's procurement programs.[6]

Lack of prewar planning by the government was the main reason for failure of U.S. industry to meet the needs of the military. Despite Herculean efforts and many successes, the defense industry never recovered from the lack of prewar planning and preparedness. By the time the Armistice was signed in 1918, the army had pumped over $14 billion into the economy. More notably, the military and industry forged close bonds, strengthened industrial self-regulation, and weakened the antitrust tradition.[7]

After the war, America became a world power. The war convinced both military and business leaders that, in the future, success depends upon a strong and coordinated industrial base that produces weapons needed by the military. This recognition and reality, however, were often totally different.

Arsenal of Democracy

During the interwar years, industrial mobilization was an integral part of military planning, but there was still a lack of actual industrial readiness. In World War II, American industry mobilized to create the legendary "Arsenal of Democracy." From output of consumer goods, industry converted to extraordinary rates of production in war material. The mobilized industry produced 296,000 aircraft, 1,201 naval vessels, 65,546 landing crafts, and 86,333 tanks for the allied powers. This output made a significant difference in the war's outcome.[8] While this perception is useful in characterizing the nature of the conversion process, it obscures the reality.

President Roosevelt had to reestablish many of the committees and boards used in World War I to execute industrial mobilization. Even with the immediate prewar expansion of defense industries, it was not until mid-1943 that the U.S. was reaching its peak production levels in many crucial war industries. This nearly 2-year period industry required to mobilize fully mirrored the earlier experience of World War I.[9] Despite many problems, the World War II defense mobilization was extremely successful. The allied powers were the best equipped forces in history at this time.

By 1944, it was apparent that the U.S. would not need all of the industrial capacity it had mobilized. We had built 1,600 new plants for the then inconceivable sum of $12 billion and financed private expansion of others costing an additional $6 billion. Almost immediately after the destruction of Hiroshima and Nagasaki ended World War II, the U.S. began a military draw-down on an unprecedented scale.[10] The great "Arsenal" lasted until the end of World War II and we did not see its likes again.

Mobilizing for Korea

After World War II, the newly perceived threat of the Soviet Union prompted Congress to establish several programs to pave the way for future mobilizations. These programs achieved key things such as: (1) Established a reserve of important military materials, (2) gave power to the Munitions Board to plan short-term mobilization and procurement, (3) formed the National Security Resources Board to coordinate long-range military, industrial, and civilian mobilization efforts, and (4) laid the framework to protect critical industries to augment production during a crisis.[11]

These efforts were not enough. As with previous wars, the Korean War in 1950, found the U.S. military woefully unprepared and required a substantial remobilization--albeit on a smaller scale than World War I--to support the war effort.

Three months into the Korean War, Congress passed the Defense Production Act, that gave the President unprecedented authority to mobilize the economy. Almost immediately, the General Services Agency placed 61 contracts for over $800 million in machine tools. Aircraft production tripled to 1,000 planes per month. By the end of 1952, the government made more than 225 direct loans worth over $300 million and underwrote over $2 billion in commercial loans.[12] The government also provided many other things--cost of new facilities and special tooling, government-owned facilities and equipment for use by contractors, and grants for research and development. Most industries supporting the war expanded their capacity.

Surging for Vietnam

After the Korean War, only a portion of the defense production was reconverted to civilian pursuits. The Pentagon maintained a large standing army and continued to pay for the research and development of increasingly sophisticated weapons.[13] Because of the highly charged political issue of U.S. involvement in Vietnam, President Johnson decided not to mobilize the defense industry. As a result, the military still feels the impact on the defense industry and its capacity to mobilize for crisis situations.[14]

In Vietnam, the Pentagon relied on "surging" key sectors of the defense industry and drawing down war reserves. There was a reliance on peacetime procurement

practices, ignoring the National Priorities and Defense Materials System, that resulted in long lead times on many systems and parts waiting behind civilian orders. Failure to use planned producer lists and competitive bidding practices created delivery problems when contracts were awarded to companies not previously designated for these products. Further slowing the process and inflating costs, the Services competed among themselves for contracts with the same producer.[15]

The lack of industry mobilization forced the government to spend millions of dollars on incentives and in reactivating its reserve plants. Increased orders to private industry absorbed much of the already scarce surplus capacity available, thus restraining long-term modernization of plant facilities. The failure of industry to modernize during this period haunted it for years. Combined with reduced post-war defense budgets that failed to make beneficial reductions in war reserve stocks, it left the American military unready to fight and unable to mobilize.[16]

There are many similarities between the Vietnam War drawdown and that of today. As the cutbacks began after the war, it was clear that defense production had become more specialized and distinct from commercial production. Defense firms found it much more difficult--and in many cases, impossible--to convert their capabilities to meet civilian demand. Because of recessions and other adverse conditions in the early 1970s, the government created many assistance programs to aid displaced defense workers, companies, and communities affected by military base closings and plant cutbacks. The one obvious difference between now and then is that defense firms could retrench and wait for the next defense build-up to counter the Soviet threat.[17]

Things Changed in the Gulf War

Desert Storm marked a new era--information warfare, precision strike, situational awareness, real time information, joint operations, and coalition warfare. Industry support was superb. The media reports of industrial "surge," however, caused confusion about actual surge. In the past, surge meant the expansion of military production short of a declared national emergency. Today, surge means accelerated production, maintenance, and repair of selected items to meet contingencies short of a national emergency using existing facilities and equipment.[18]

The Gulf War did not (with few exceptions) provide a strenuous test of production surge capabilities. War reserves for most items precluded a general mobilization. The greatest demand was for quick surge to overcome deficiencies in war reserves of secondary items (e.g., tanks, aircraft, etc.). In some cases, industry's surge capabilities were marginal and could have had serious consequences had the offensive begun sooner or lasted longer. For many items, industry required 6-9 months for surge to maximum production--even for relatively inexpensive, low-technology items, such as clothing, sandbags, and barbed wire.[19]

Since the war was short, the military had no insurmountable problems with the industrial base. However, Dr. James Blackwell, Center for Strategic and International Studies, said "Had the Gulf War lasted longer, the lack of coherent industrial response, authorized by the Defense Procurement Act, would have resulted in disastrous shortages of critical spare parts, consumable items, certain ammunition, and many other items." In many ways, the industrial base no longer existed. Defense firms were

already laying off workers, closing plants, and searching for commercial business.[20] As the Gulf War so amply demonstrated, we still need a powerful military and a responsive industrial base to support future conflicts.

Merger and Consolidation Mania

In 1993, then-Defense Secretary Les Aspin and Bill Perry, his deputy, invited a dozen defense industry executives to dinner. Perry told them that there were twice as many in the room than the Pentagon needed in five years and that the government would watch some of their firms go out of business. Those present at this event--now referred to as the "Last Upper"--heeded his message.[21] The defense industry transformed itself with little or no government interference, except, the Department of Defense subsidized the costs of defense mergers. They also provided forthright information about future systems and the budget so that industry leaders could intelligently plan and restructure themselves.[22]

Defense firms merged faster than anyone expected. After the "Last Supper," defense firms merged and consolidated to form three defense industry giants: Lockheed Martin Loral, Boeing, and Raytheon. Lockheed Martin Loral, a $30 billion firm, controls over 40 percent of the defense budget.[23] After mergers tailed off, industry experts identified three main trends. One is that firms have either merged or quit defense altogether. The second is that firms want defense electronics companies--the only growing defense sector. The third trend is that business size--bigger is better--is crucial. Larger firms can bear the costs of research and development, bidding new

contracts, and managing risky programs.[24] Between 1992 and 2010, projections (see figure 1) from the Defense Logistics Agency on the status of key elements of the industrial base provide clear evidence of the radical changes taking place.

	1992	1996	2010
Aircraft			
Bombers	3	2	1
Fighters	5	4	2
Helicopters	4	4	2
Related Materiel			
Ballistic Missile Defense	6	4	3
Expendable Launch Vehicles	3	2	1
Satellites	5	4	3
Rocket Motors	6	6	3
Strategic Missiles	1	1	1
Tactical Missiles	8	8	8
Tracked Vehicles			
Tanks	1	1	1
Armored Personnel Carriers	8	8	4
Munitions			
Small Caliber	5	5	3
Cannon Caliber	5	5	3
FASCAM	2	2	1
Pyrotechnics	1	1	1
Bombs	4	2	1
Mortars	3	2	1
Artillery Caliber	4	4	2
Propelling Charges	2	2	1
Fuses	22	13	8
Dispenser Munitions	2	2	2
Navy Guns	1	1	1
Tanks	3	3	2
Demolition, Grenades, and Mines	8	5	2
Rockets/Warheads	4	3	2

Source: Defense Logistics Agency, Industrial Analysis Office, December 1996.

Figure 1. Past, Current, and Projected Domestic Sources of Defense Material[25]

There are now only 30 or so prime contractors selling directly to the Defense Department. They are supported by about 40,000 lower tier firms--down from over 120,000 a few years ago. This trend raises concerns about the effects of "vertical integration." What is it? A firm with full vertical integration produces the entire weapon

system, to include subsystems and components. A firm with lesser amounts of vertical integration buys subsystems and components from other firms. The Pentagon prefers competition among prime contractors, but it is not always economically feasible. Consider tank production. It makes no sense to keep two primes in tank production because of the low buying rate. Therefore, If competition is limited among primes, the Pentagon wants vigorous competition among subcontractors.[26]

On May 6, 1997, Dr. Kaminski released the Defense Science Board's report that studied several major platform sectors--such as helicopters, bombers, and tracked vehicles--and key supplier areas to determine the impacts of vertical integration. The Board found four major issues: (1) Many primes now produce subsystems and components in areas traditionally provided by subcontractors. Albeit, there is little evidence that firms use their vertical advantages to freeze other firms from the market, it is a potential problem in the future; (2) the Pentagon has trouble identifying emerging vertical integration problems due, in part, to a smaller acquisition workforce and some changes in oversight reform; (3) defense initiatives for competition based upon best value and Cost as an Independent Variable create a powerful market force to mitigate potential vertical integration problems. If done properly, primes will select subcontractors that help them win a competition rather than arbitrarily making those products in-house; and (4) Defense Department managers need much more savvy and knowledge about elements of the industry.[27]

With Cost as an Independent Variable, the Pentagon moves from a world where performance is the only consideration. Acquisition of Tier II Plus (class of high altitude,

low endurance, unmanned airborne vehicles) was an effective use of this strategy; the main requirement was a $10 million flyaway cost. The incentive was to maximize military capability for $10 million and field an economical reconnaissance asset that we can risk sending into enemy airspace.[28] Cost as an Independent Variable is a successful strategy that we will likely use more often in the future.

As a result of the Defense Science Board's findings, Kaminski directed actions in acquisition program management in three areas. They include:

(1) Increasing invisibility with Defense-wide monitoring of selected, important subcontractor product and technology areas. Program managers will assist by closely monitoring their contractors' choices of suppliers and teams.

(2) Fostering competition at prime and subcontractor levels. The Pentagon assumes that vigorous "best value" competition at the prime level will stimulate competition among the subcontractors. Acquisition strategies, such as leader/follower productions, open systems architectures, risk reduction programs [to encourage more entrants], and elevation of key subcontractor issues in source selections will help in this regard. The Pentagon must also watch technology investments--in areas providing a notable performance edge as we compete systems--that result in limited competitors.

(3) Improving the knowledge of acquisition managers so that they are effective arms-length buyers. The Pentagon will expand the curricula at defense schools and the credentials of acquisition managers to emphasize industrial and business knowledge.[29]

There are a few other options that might keep mergers from becoming self destructive and keep competition alive. They include: (1) Put foreign contractors on an

equal competitive footing with U.S. companies, (2) give research funds to losers of a competition to start working on the next defense project, and (3) have cross-service competition for the technology that best serves a mission; for example, missile-firing ships instead of missile-firing aircraft.[30] The Joint Requirements Oversight Council process is a forum, already established, to manage some of these programs. It serves to eliminate duplication of development efforts and capabilities among the Services.

Dual-Use the Answer

In February 1995, Dr. Kaminski presented dual-use technology as the heart of the Pentagon's industrial base strategy. He defined dual-use technology as investments in research and development on technologies that benefit both civilian and defense sectors. In other words, he expects industry to research, develop, adopt, and improve technologies--into the world's best--that defense can then use in weapon systems at an affordable cost. According to Kaminski, dual-use is no "silver bullet" for affordable technological superiority. Instead, it is a carefully crafted and multi-faceted investment strategy.[31]

Dual-use technology development and transfer occur through a number of complementary mechanisms. They range from interactions with universities and industry through core programs, to the Technology Reinvestment Project, the Small Business Innovation Research Program, the Federal Defense Laboratory Diversification Program, and countless personal interactions between the Defense Department, university, and industry personnel. The Pentagon invests over $2 billion

in dual-use technology projects.[32] Among the most important dual-use technologies include Non-Developmental Items and Commercial Off-the-Shelf acquisitions.

The Pentagon does not believe that industry can build full-up weapon systems on a commercial or common production line. However, industry can use common production facilities to capture economies of scale at the subsystem, component, and piece part levels. For instance, defense could use commercial designs for a turbo-alternator on the M1 Abrams Tank or the propulsive unit for a new land vehicle. In general, the Pentagon must evaluate all requirements that drive unique processes or production facilities and decide whether the benefits are worth the incremental costs.[33]

Perhaps the most important aspect of dual-use technology is that of dual-use-by-design. The military must design future weapon systems with dual-use integration in mind, using fully integrated factories--common tools, labor, and information technology. By following these procedures, they ensure state-of-the-art technologies (both product and process) in the commercial world, as well as high volume, low cost, and high quality items that comes from commercial production. Obviously, the greatest commonality exists at the lower tiers, to include unique defense items.[34]

The Defense Advanced Research Projects Agency is a model agency for dual-use projects. It manages an unrestricted annual budget of over $1.5 billion mainly through research and development contracts with universities, private companies, or federal laboratories. Their tiny staff of 140 program managers act like technical entrepreneurs--not turf-protecting bureaucrats. Their engineers and scientists come from industry, military, or universities for about three years and leave when their programs are

complete. The Defense Advanced Research Projects Agency either started or funded some of the most spectacular high-tech weapons used in the Gulf War. More important, their gambles on nascent technologies have helped create dozens of outstanding high-tech companies that do both commercial and government business.[35]

By the same token, dual-use initiatives fail if not managed properly. The military's Very High Speed Integrated Circuit Technology Program is an example. It was heavily funded, and, in part, justified as having dual-use applications. Since the military was funding the program, traditional procedures were followed and the contract was awarded using defense-unique requirements. These over-stated requirements, with pressures to develop and field the system rapidly, led to costly design features. The very features that made the program distinctive were not of interest to commercial markets after weighing benefits relative to price.[36] Trading performance and cost for dual-use considerations must be a factor in future procurements.

Dual-use technology is not a panacea. The Pentagon divides the sources of defense-related goods and services into two industrial groups: Goods and services that are purely commercial or purely defense. For defense, dual-use programs provide goods and services that are manufactured exclusively for defense uses. However, certain components and subsystems of these weapons may also have civilian applications. Firms that produce dual-use goods may therefore make them simultaneously for both defense and civilian markets. In promotion of dual-use, the military assumes trouble-free supply production from civilian sectors. However, the civilian marketplace does not always function smoothly. Any number of civilian market

forces may significantly affect both the supply and demand for goods. The Pentagon must subject these potential problems to critical analyses.[37]

In Desert Storm, for example, industry was strained to meet surges in camouflage clothing and boots. Cloth for uniforms was delayed until industry made cloth of desert patterns. There were no specific requirements for these items prior to the Gulf War and no purchases were made of desert pattern uniforms since 1986. Thus, a substantial part of the force deployed with woodland pattern uniforms. Within 30 days, more than 3,000,000 desert uniforms were on contract.[38] The point is that, had the war started earlier, the uniforms were not available.

A survey result of 200 firms doing business in both the military and civilian sectors strongly supported the feasibility of a single defense/commercial operation. Eighty-nine percent of the companies said that they could manufacture different products in a single operation. Only four of the 200 respondents indicated that their products and processes were completely different, with no potential for co-production. The primary barriers to integration, then, are based almost entirely on the legislation, regulations, and practices that govern the defense way of doing business. Many of the rationales for these rules no longer exist.[39]

Acquisition and political reforms are the best hope to substantially reduce costs while continuing to field dual-use technologies and state-of-the-art weapons to our Services. A critical initiative to spur dual-use in acquisition is the continued removal of defense-unique specifications and standards and more aggressive commercial practices. A few years ago, a program manager had to get a waiver to use commercial

specifications. Today, program managers need waivers to use military specifications and standards. As a result, the military is expecting to reap big cost savings.

How do you get even more from dual-use defense dollars? There are three main ways: (1) Encourage scientists and engineers to watch out for commercial application throughout the research and development process, (2) push industry to take advantage of the ideas, technology, and talent hidden away in federal laboratories and universities, and (3) break down barriers that prevent weapons makers from buying commercially available products, such as chips, computers, and communications equipment. They are cheaper--and often better--than their military counterparts, and the money saved could go toward more research.[40]

Maybe Globalization

Foreign suppliers provide many of the critical components of almost every U.S. weapon system. Dr. Kaminski said that we must leverage our allies' industrial base for three main reasons: (1) Politically--these programs strengthen our connective tissues, (2) militarily--we are likely to operate as a coalition, therefore, we need interoperable equipment and rationalized logistics, and (3) economically--our defense budgets [U.S. and allies] are shrinking; thus, common efforts make sense and are more affordable. Although the history of international cooperation is not good, foreign ownership and technology transfer is good. Most of the problems center on conflicts between very narrow interests that are at odds with broader cooperative interests.[41] The Department of Defense must deal with these issues now to formulate a concrete plan for the future.

Many U.S. defense companies are dependent on foreign military sales. From 1987 to 1993, America's foreign military sales grew from $6.5 to $32 billion. The U.S. now dominates the foreign market with a 70 percent share. Despite the desirability of foreign military sales to help defense firms survive, one must question the long-term desirability of aiding arms proliferation. It shocks Americans that the U.S. approved sales of $1.5 billion in advanced technology and products to Iraq just one day before it invaded Kuwait.[42] Yet, this revelation did not slow foreign military sales.

A unified European market poses a competitive challenge for our defense firms. The next stage for penetrating our market is by entering into multinational production alliances, similar to arrangements by members of the National Alliance of Treaty Organizations. In theory, an alliance would select a manufacturer [U.S. or foreign] as a lead supplier that is then expected to select subcontractors from throughout nations of the alliance.[43] The benefits are huge--shared technologies, cheaper weapons, more competition, and less national protectionism. However, most observers expect foreign companies to remain subcontractors in the Western Hemisphere. The fact that U.S. military research and development spending dwarfs that of its allies give U.S. companies the edge.[44] Although that edge has decreased over the past few years, defense firms want to increase their share of foreign markets.

International cooperation is profoundly influenced by different national approaches to defense procurement. Traditions of government intervention or direct support to industry, and national, political, social, and economic demands, frequently prove more compelling than international security. Much like members of our Congress, Western

European parliamentarians see most industrial preparedness initiatives and co-production schemes through a different prism than civil and military resource planners.[45] Our government must realize that other nations must also manage their respective national and defense policies and then, nurture commitments to defense research, development, and production efforts.

Foreign source dependency also poses other potential problems. For example, U.S. precision guided munitions all contain foreign components that are produced in allied or friendly countries. The prospect of losing offshore sources in peacetime is not of great concern. In a crisis or wartime involving the U.S. and significant numbers of its allies, the reliability of foreign sources becomes uncertain. Similarly, decisions about the size of domestic munitions industries do not take into considerations requirements generated in a crisis by allies armed with our weapon systems. The real issue is vulnerability--not foreign dependency.[46]

Nations may also want to maintain a capacity to make certain weapons for crisis situations. The British still remember that the Belgians would not sell them shells during the Gulf War. But this argument is wearing thin, now that no country--including America--can afford to develop all of its weapons and components at home. Our allies have agreed to trust each other's armed forces in time of war, therefore, it makes sense to trust each other to supply arms.[47] We must remove export controls as appropriate; then look to exercise greater coordination and control on exports to third world countries. By removing export controls, it provides the seeds for greater cooperation and communications among companies.

In sum, foreign technology transfers are potentially detrimental to American defense firms by providing advantages to overseas competitors. On the other hand, it is very difficult to restrict flows of technology across borders. The Pentagon must consider the impacts of foreign technology transfers in future defense policies. In particular, the Pentagon and other government or private sector entities must monitor three areas related to foreign defense production and research and development: (1) The degree to which foreign defense production reduces the demand for material made in the U.S., (2) the projected reliability of foreign sources in time of crisis or war, and (3) the overall effects of globalization on our ability to maintain technological superiority.[48]

Arithmetic of Privatizing and Outsourcing

Privatization and outsourcing are becoming an ordinary means of doing business within the Defense Department. Why? It saves money. The arithmetic is stunning. Defense support functions consume up to $160 billion annually. A defense outsourcing task force that met from 1995 to 1996 estimated annual savings of $7-12 billion by outsourcing. The Defense Science Board later confirmed these estimates.[49] Although the payoff is big, the Pentagon is too slow to reap savings in this area.

The Pentagon spends considerable time examining areas to privatize without compromising military readiness. A Coopers and Lybrand study has shown how the military could save $1 billion alone by farming out data-processing operations during the next 10 years. That and other research has created high-level support for privatization within certain defense sectors.[50] Those who favor privatization argue that

the private sector is more efficient, effective, and economical that the government. Opponents cite concerns about responsibility and accountability and question how private firms can provide the same service and make profits.

Competition for depot maintenance of military weapons has gained considerable media coverage. In 1995, a Congressional Budget Office study questioned whether the public and private sectors traditional depot maintenance roles remain appropriate in today's environment. It stated that the military spent $9 billion (70 percent of its total maintenance budget) in 1995 for work performed by 89,000 government civilians that operate 30 major depot maintenance facilities. The military also uses over 1,300 U.S. and foreign commercial firms to support depot maintenance.[51] Currently, the private sector performs about 32 percent of defense's total depot maintenance work, ranging from three percent of Navy submarines to 100 percent of Army aircraft maintenance.[52]

Base commercial competitions for workload between public and private sectors are structured by the Office of Management and Budget Circular A-76 (Commercial Practices and Competition) process. From 1978 and 1994, the Pentagon conducted over 2,000 A-76 cost comparisons with government teams winning 50 percent of the competitions. As a result, the military saved about 30 percent or $1.5 billion per year.[53] Outsourcing and privatization provide a critical means of improving performance, lowering costs, and obtaining funds to increase research and development and modernization budgets.

The military does not use the private sector more often for two reasons. One is lack of internal transfer prices for government goods and services. Public and private cost

comparisons are extremely difficult because bids do not contain the same cost elements. By law and regulation, contractors must reflect overhead in their costs, yet, public operations do not include all overhead costs. Second, a relevant unit cost comparison is impossible. The Defense Business Operations Fund is a revolving fund that facilitates transfer pricing between public organizations. However, Congress establishes rates and imposes restrictions that impede efficiency and true market-like incentives. If public operations were allowed to make, spend, and distribute profit, its management would have more incentive to improve organizational efficiency.[54]

Supporters of public-private competition argue that it forces public organizations to become more efficient by reducing unnecessary costs. In addition, it can encourage innovation on both sides and also push suppliers to improve the quality of their services. However, disparities in current accounting methods and rules between the two sectors make evaluating costs challenging and inherent barriers to effective implementation. While shrinking the government is relying more on private-sector contractors, the process used to compete for goods and services remain bureaucratic and risk adverse.[55]

Conclusion

The 20th Century history of industrial mobilization preparedness is consistent. In every war, except Desert Storm, lack of government prewar planning was the main reason for failure of industry to meet initial war requirements. Even in Desert Storm, many experts believe that industry's surge capabilities were limited and had the war

gone longer, the military would have had serious shortages in certain areas. Another consistent trend is that post-war defense budget cuts and political agendas caused massive downsizing in the military infrastructure, to include the defense industrial base.

The Defense Department recognizes the need to transform the industrial base to support Joint Vision 2010 forces. They espouse a dual-use strategy that integrates the defense industrial base into a single commercial or national industrial base. Industry will research, develop, adopt, and improve technologies that the military can use in weapon systems at an affordable cost. The private sector can already produce many military requirements and continued acquisition reforms will allow them to meet more. Nonetheless, it is doubtful that industry can meet all war requirements timely. Commercial industry cannot provide defense-unique requirements as stealth, armor, large caliber guns, and many other items. The Department of Defense must identify and protect defense-unique critical sectors.

In conjunction with the dual-use strategy, the Pentagon must posture itself for robust programs to privatize functions and promote cooperation (research and development of weapon systems) among allies. Foreign technology transfers pose many problems and are potentially detrimental to the global competitiveness of U.S. firms. However, the benefits of increased competition and wider access to critical military technologies far outweigh the negative impacts. Privatization, international agreements, and foreign military sales mitigate some defense concerns about vertical integration that resulted from the mergers and consolidations of American defense firms.

The Department of Defense has a viable strategy to transform the industrial base. Leveraging commercial technology to create military advantages is critical to ensuring that we get more bang for the buck. The challenge is one of commitment to form a national industrial base. Before the Battle of El Alamein, Winston Churchill advised General Montgomery to spend more time in the study of logistics. Montgomery, who viewed himself as an expert field commander, doubted that he should become involved in such technical matters. "After all, you know," he replied to Churchill, "they say familiarity breeds contempt." Churchill replied: "I remind you that without some degree of familiarity we could not breed anything."[56]

Two key ingredients of commitment--money and leadership--are required to breed a national industrial base that supports Joint Vision 2010 forces. Perhaps the greatest impediment to a national industrial base is the Pentagon's meager investment of less than $3 billion in dual-use projects. It is not adequate. Undoubtedly, the size of the defense budget and the cost of commercial goods and services will drive the transformation to a national industrial base. The availability of defense dollars will determine the magnitude of dual-use initiatives, international armaments' agreements, and privatization. Defense dollars will also improve the quality and competitiveness of the domestic supplier base at the lower tiers. Money will determine success and inadequate funding will jeopardize the entire strategy.

Because of the overarching significance of the political process in providing direction and channeling resources to the acquisition system, politicians and senior Defense Department leaders permeate the entire process. They will continue to focus

on cost, but the first change needed is one of priority as reflected in funding. Regrettably, it often takes a crisis to focus assets and responsibilities for effective planning and preparation. However, politicians must act now to obtain a comprehensive assessment of the defense industrial base strategy. Then they must approve it, provide sustained funding, and hold Defense Department officials accountable to execute the plan effectively and efficiently. As we look to the future, we must learn from the past. These monumental changes will not happen quickly, but it is a giant step to recognize that it must happen if we expect our industrial base to support 21st Century military forces.

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ENDNOTES

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